



Advancing Digital Storage Innovation



The ClusterStor Engineered Solution for HPC

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Forward Looking Statement

The following information contains, or may be deemed to contain, "forward-looking statements" (as defined in the U.S. Private Securities Litigation Reform Act of 1995) which reflect our current views with respect to future events and financial performance. We use words such as "anticipates," "believes," "plans," "expects," "future," "intends," "may," "will," "should," "estimates," "predicts," "potential," "continue" and similar expressions to identify these forward-looking statements. All forward-looking statements address matters that involve risks and uncertainties. Accordingly, you should not rely on forward-looking statements, as there are or will be important factors that could cause our actual results, as well as those of the markets we serve, levels of activity, performance, achievements and prospects to differ materially from the results predicted or implied by these forward-looking statements. These risks, uncertainties and other factors include, among others, those identified in "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations" and elsewhere in the company's 20-F filed with the SEC. Xyratex Ltd undertakes no obligation to publicly update or review any forward-looking statements, whether as a result of new information, future developments or otherwise.

An Integrated Lustre Solution – Why bother ??

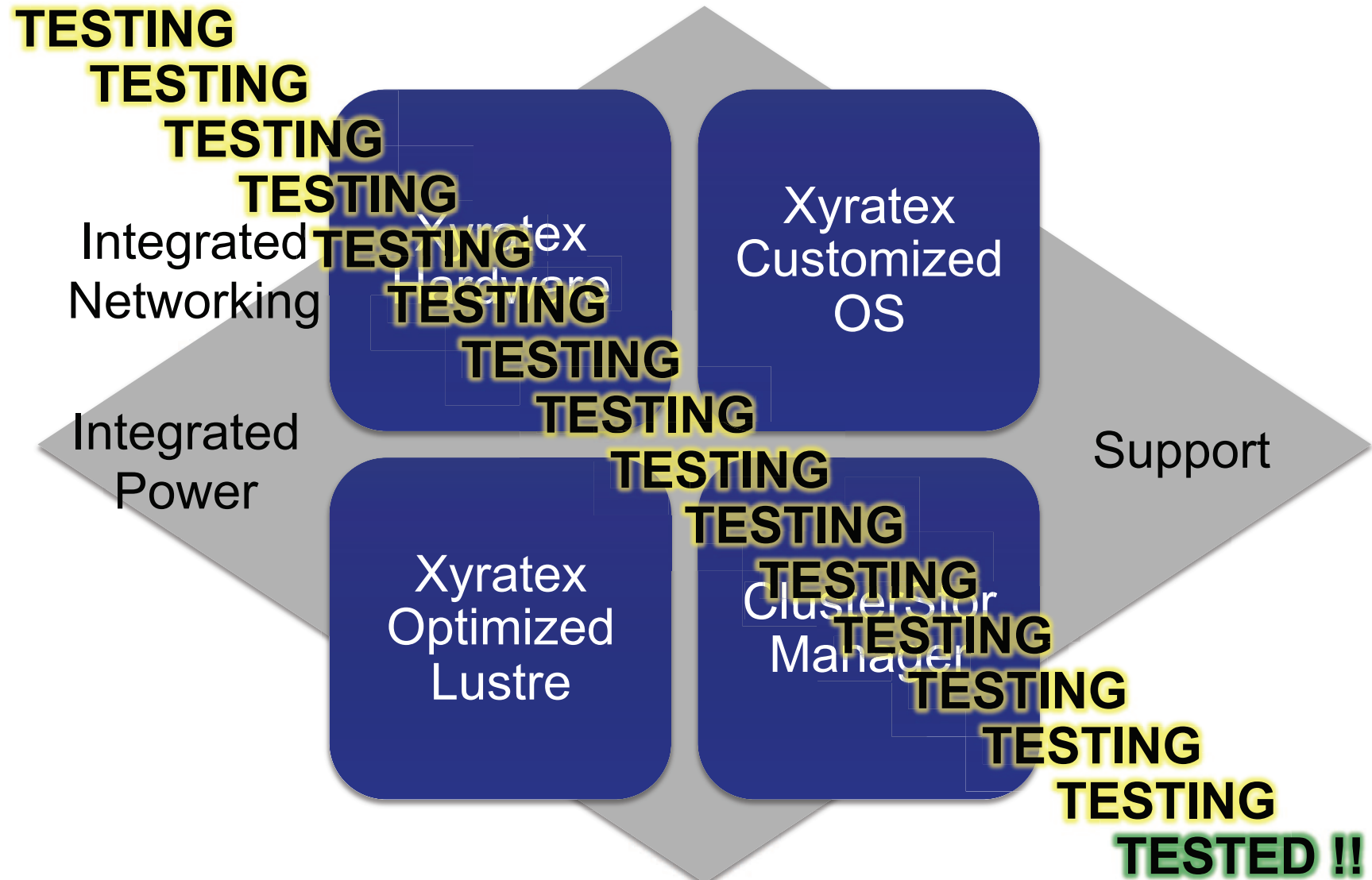
Because Lustre can be hard and painful ...

Task	Typical Lustre	ClusterStor
Configuration and Ordering	Multiple discreet building blocks, myriad of part numbers and options, complex configurator	Simplified configurator model with Single Scalable Storage Unit (SSU) part number
Software Installation	>5 Days	Factory Installed
Out of Box Experience	>5 Days to get system up and running	Out of box to configured storage cluster in <4 hours
Performance Tuning	2-4 Weeks balancing OSS, networking, RAID and JBOD systems	Immediate (Factory Set)
Client Setup	2-5 Days	Immediate (Factory Set)
Storage Expansion	3-5 Weeks	<5 Hours
Acceptance Testing	Standard (weeks/months)	Shortened (Days/Weeks)

Is it important ??

- **While Lustre grows in the Top500 it needs to grow beyond the list**
 - Footprint in automotive, aerospace and manufacturing still small
 - Footprint in atmospherics almost non-existent
 - While present in the energy sector, this is not growing
 - Finance ??, Pharmaceutical ??, Data warehousing ??
- **For acceptance by industry several things are needed**
 - HSM (on the roadmap since many years but)
 - Back-ups and snapshots ...
 - Windows connectivity
 - Graphical management tools
 - Training ??
- **Custom builds wont work**
 - Industry buys appliances
 - Support important (global 24/7 level 1-3 support required)
 - Standard components produced in volume (user replaceable)

Appliance Architecture – Balanced approach





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Scalable Storage Unit – SSU HA-OSS enclosure

ClusterStor Storage Module – Enclosure Layout

- **5U Height**
- **84 x 3.5" drives (16.8 drives per U)**
 - 3.5" SAS SSDs and HDDs @ ≤ 7200 RPM
- **Two SBB Embedded Server Modules**
- **Fully Redundant (1+1) Power**
 - Gold standard 2.8 kW PSUs with built in UPS batteries (Metis)
- **Industry leading performance/capacity per kWh**
 - Two PSUs power all disks, 2x Servers, fans and the UPS
- **Dual Cable Assemblies**
 - Redundant SAS and Power connections to drawers
- **Single Power & Connectivity Midplane**
- **Rear mounted fan assemblies**

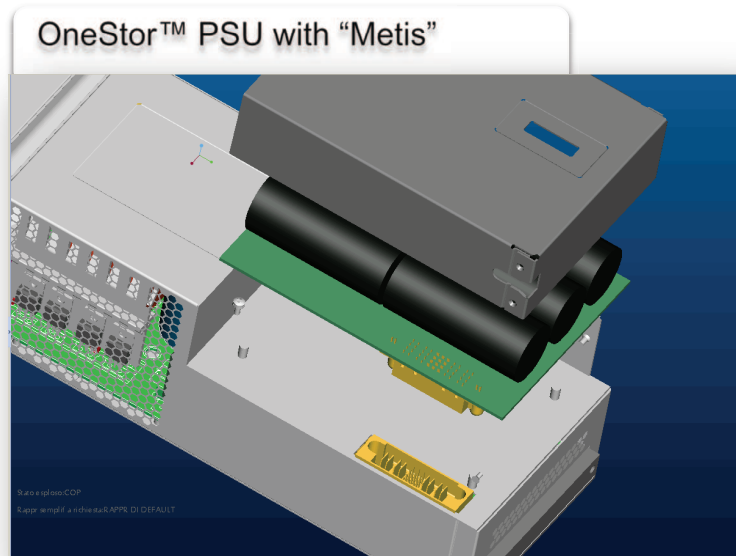


'Xyratex' Patent Pending

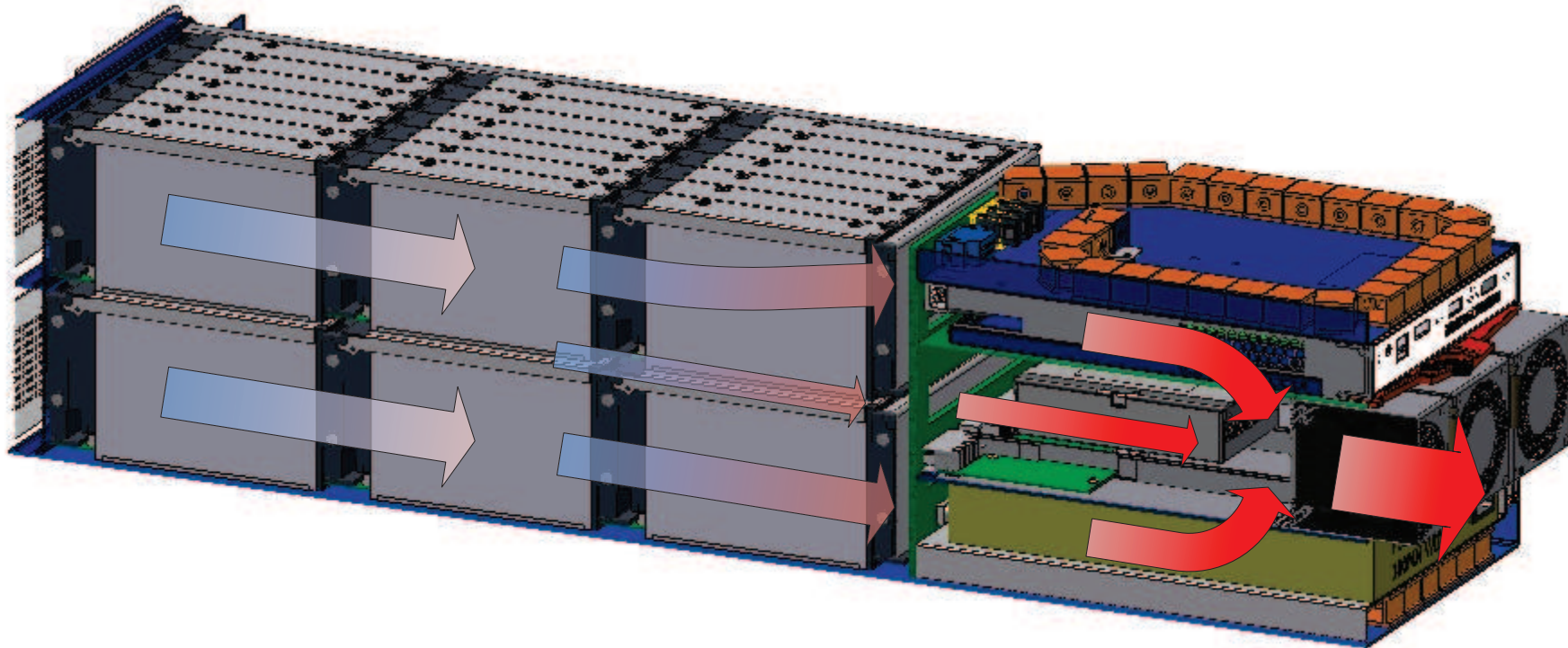
x-y-r-a-t-e-x

Metis

- Xyratex “Metis” technology adds long-hold power supply capabilities to OneStor™ storage enclosures – 764W.
- Removes the need for cache holdup batteries in I/O controllers and external UPS
- During AC failure the CPU complex remains powered for short period of time, enabling the dump of volatile memory to a non-volatile store
 - Frees up space in the rack or I/O controller canister for adding other functions
 - Eliminates the need for NVRAM cards

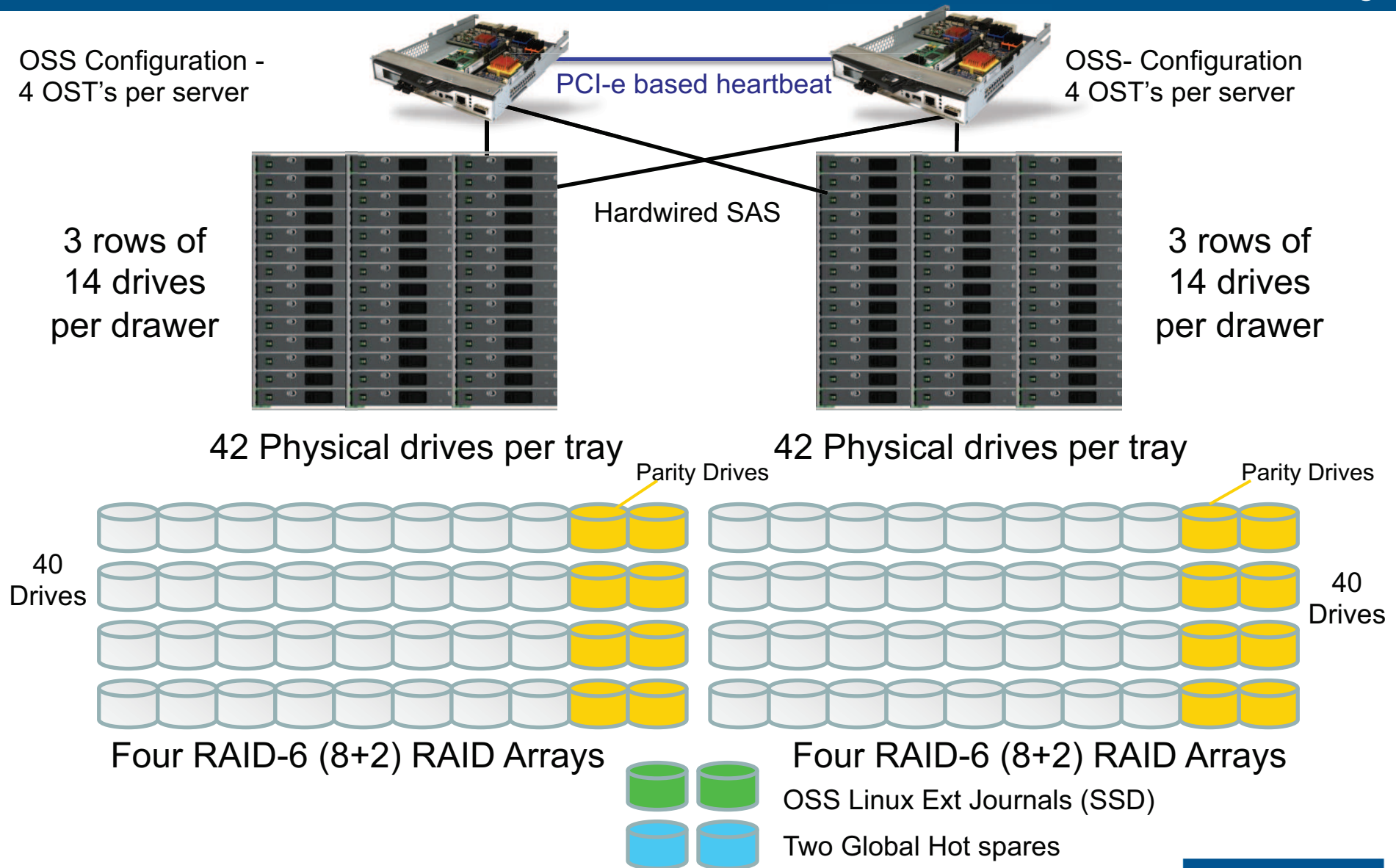


Front to Back cooling



- Air enters at the front
- Flows between the drives via controlled air gaps
- Most airflow is directed to
 - PSUs
 - Embedded servers
- Some airflow passes through to fan modules – cooling any ‘Metis’ batteries fitted.
- Air exits top vents in PSUs and embedded servers (inverted)
- Air exits via fans at the rear.

CS-2584 OSS – Custom enclosure / standard Lustre design





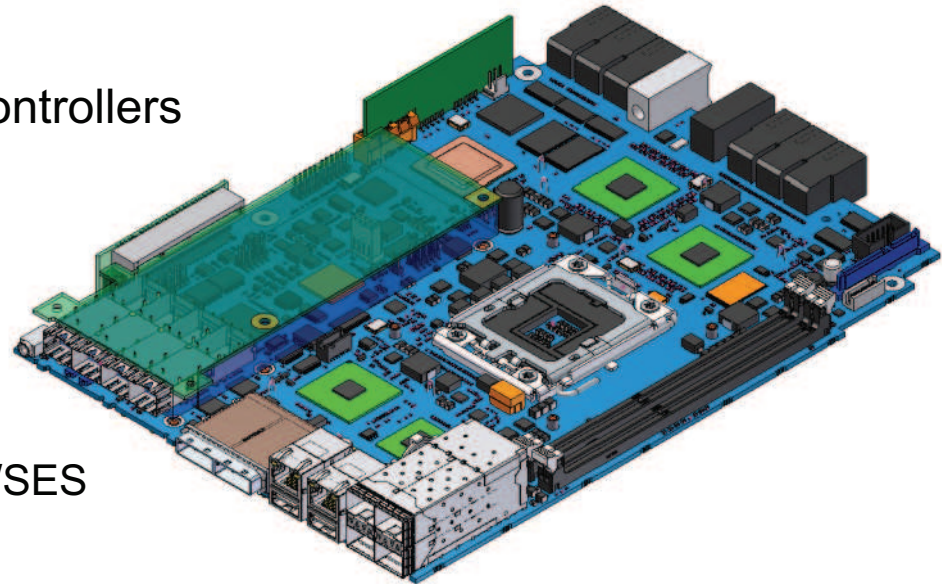
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ClusterStor 3000 ESM

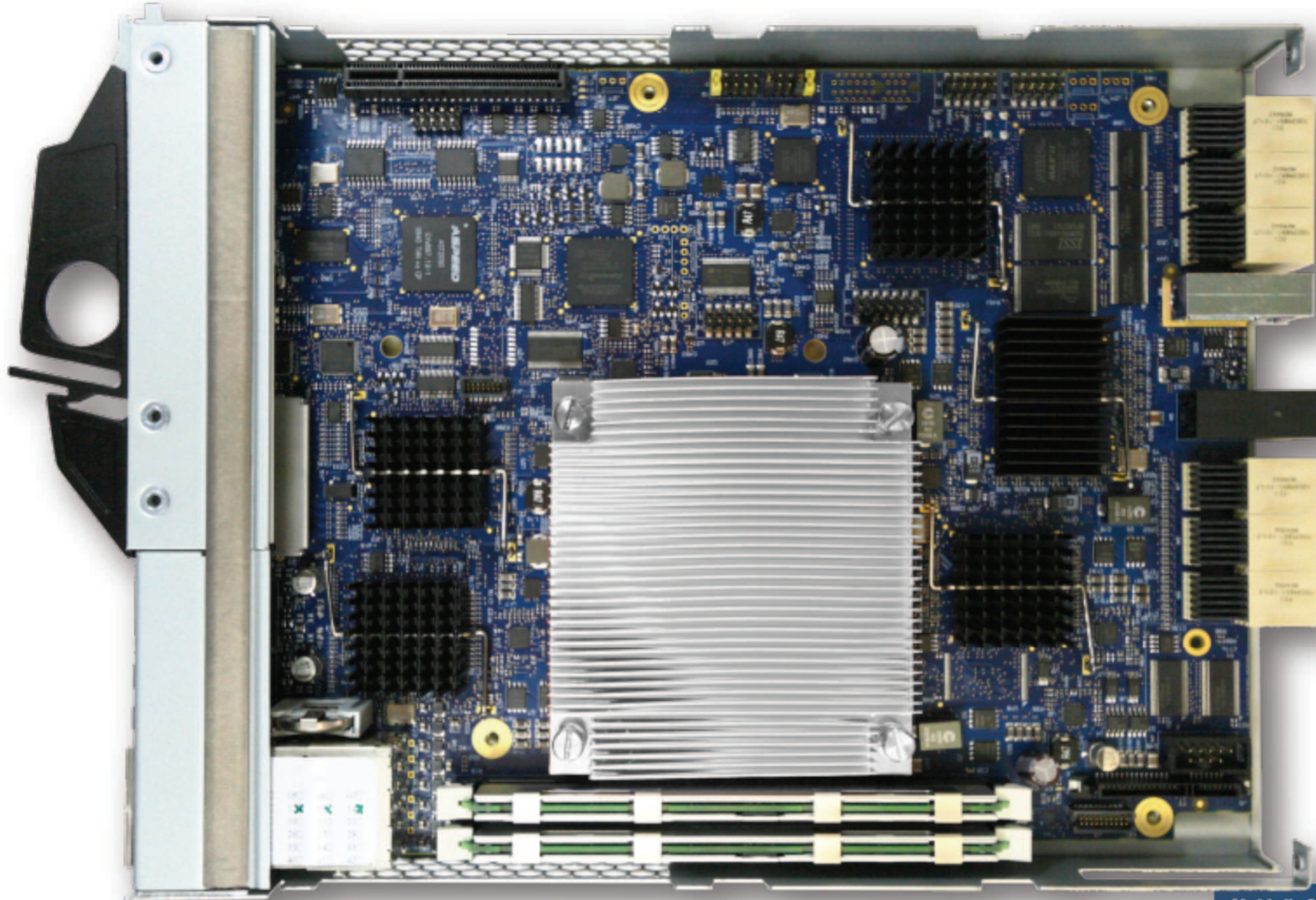
ClusterStor 3000 OSS – Embedded Server Module

- **Intel Nehalem micro-architecture “Jasper Forest” CPU**
 - Quad core (Xeon C5518) with RAID enhancements (XOR/P+Q)
 - Fully integrated DMA engine
 - 48W Max TDP low voltage SKU
 - Integrated DDR3 ECC memory controllers
 - Integrated PCIe Gen 2 buses
- **Boot Options**
 - USB, SATA, Network Boot (PXE)
- **Management**
 - Xyratex Unified System Management/SES
 - IPMI version 2.0
 - Serial-over-LAN, iKVM and Remote Media
- **Mellanox Connect-X2 HCA providing a single QDR IB port**
- **SAS 2.0 Expansion and Drive Side interfaces**



The entire hot swappable server uses less than 200W

ClusterStor 3000 OSS Module – Major Component Detail



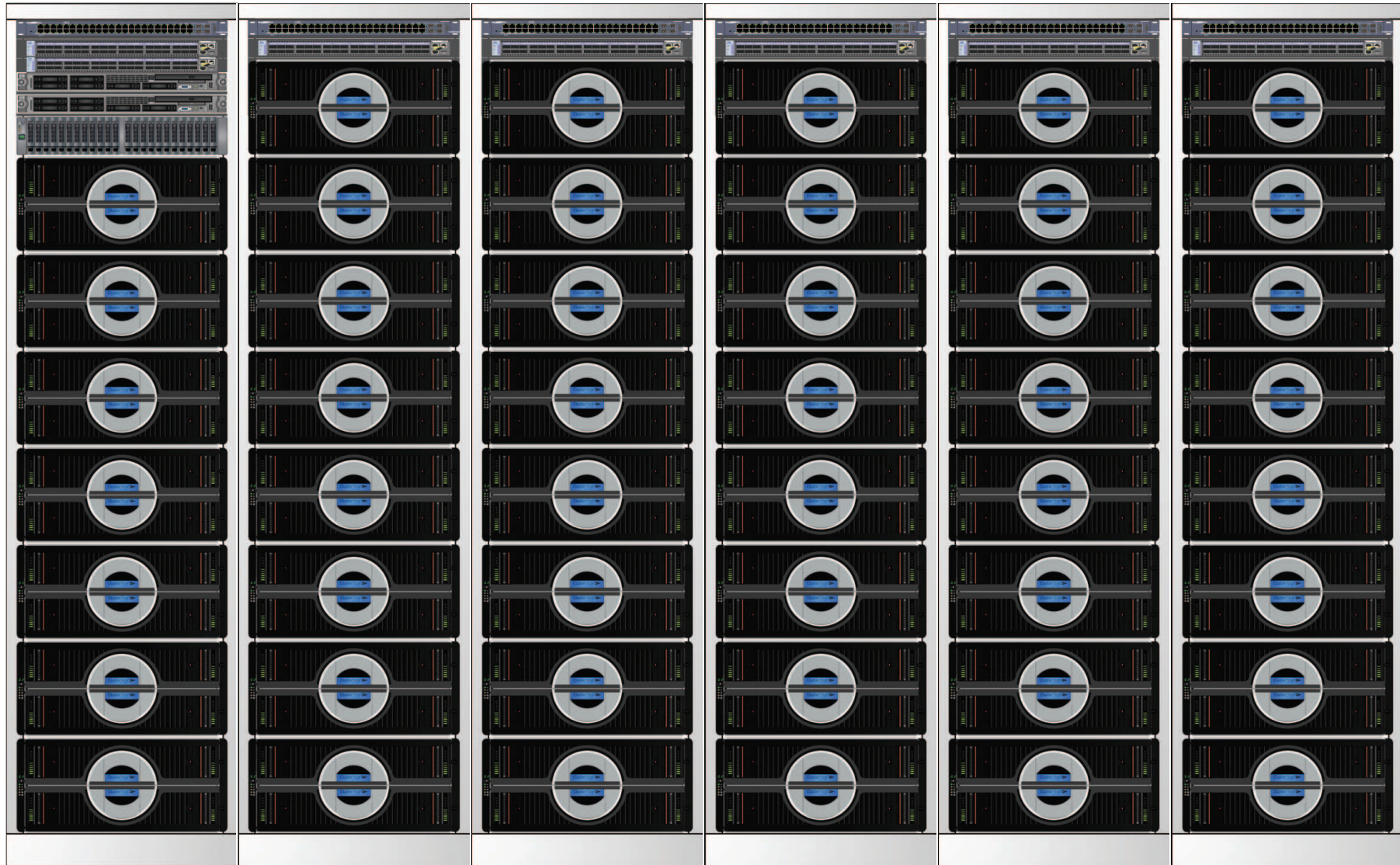


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Integrated Solution

Factory built, cabled, installed, tuned and tested ...



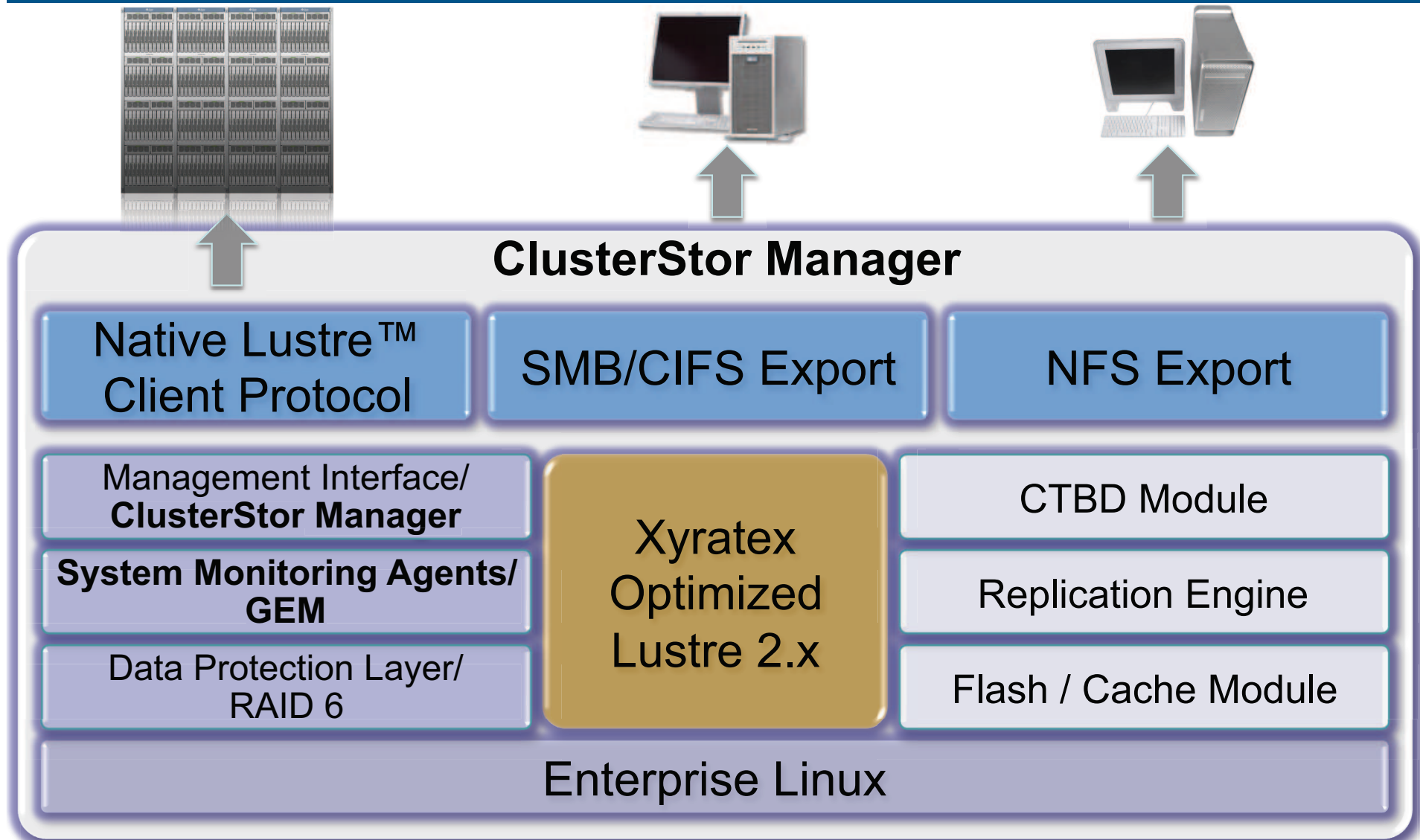


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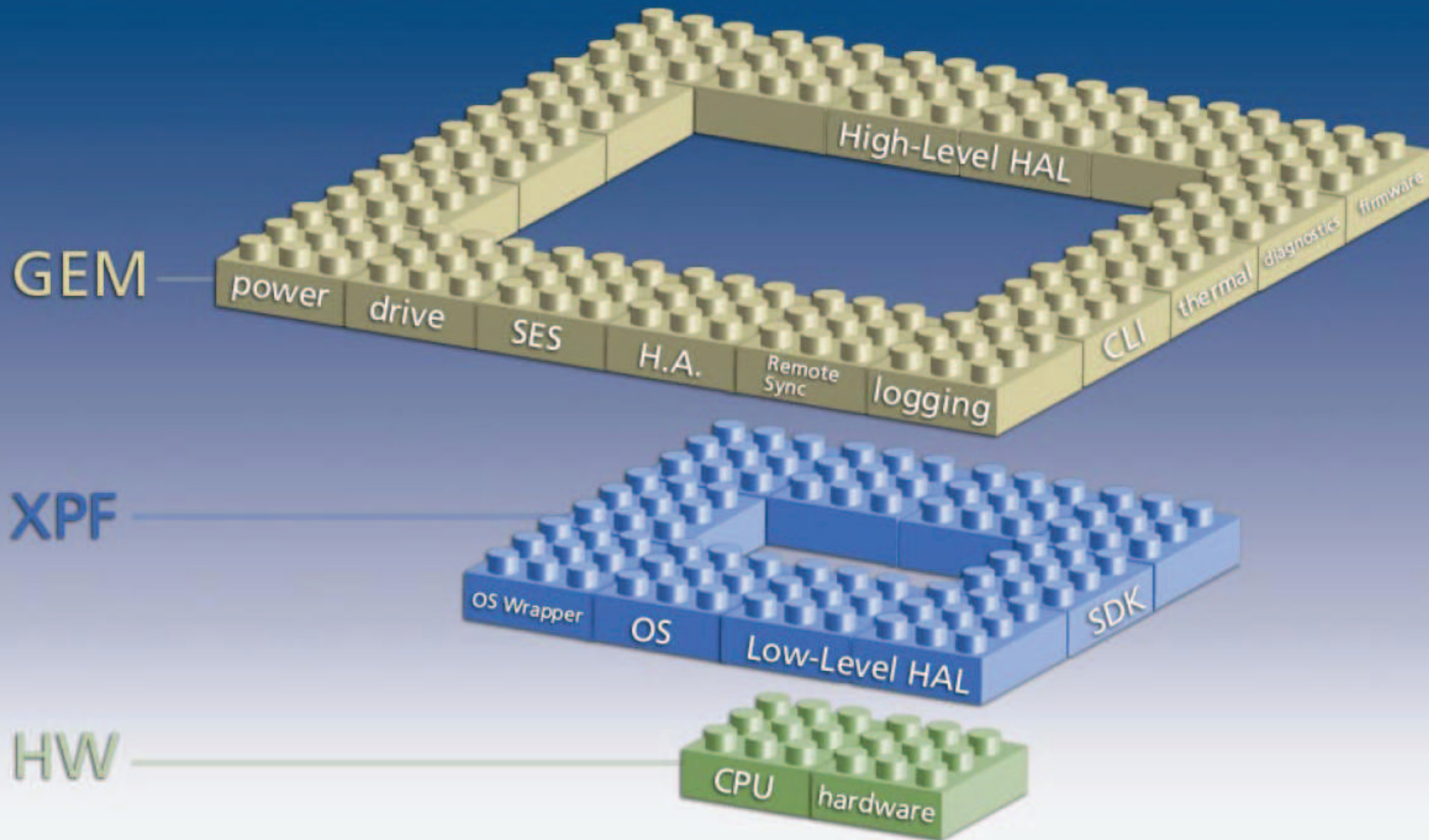


ClusterStor Software Features

ClusterStor Stack Overview

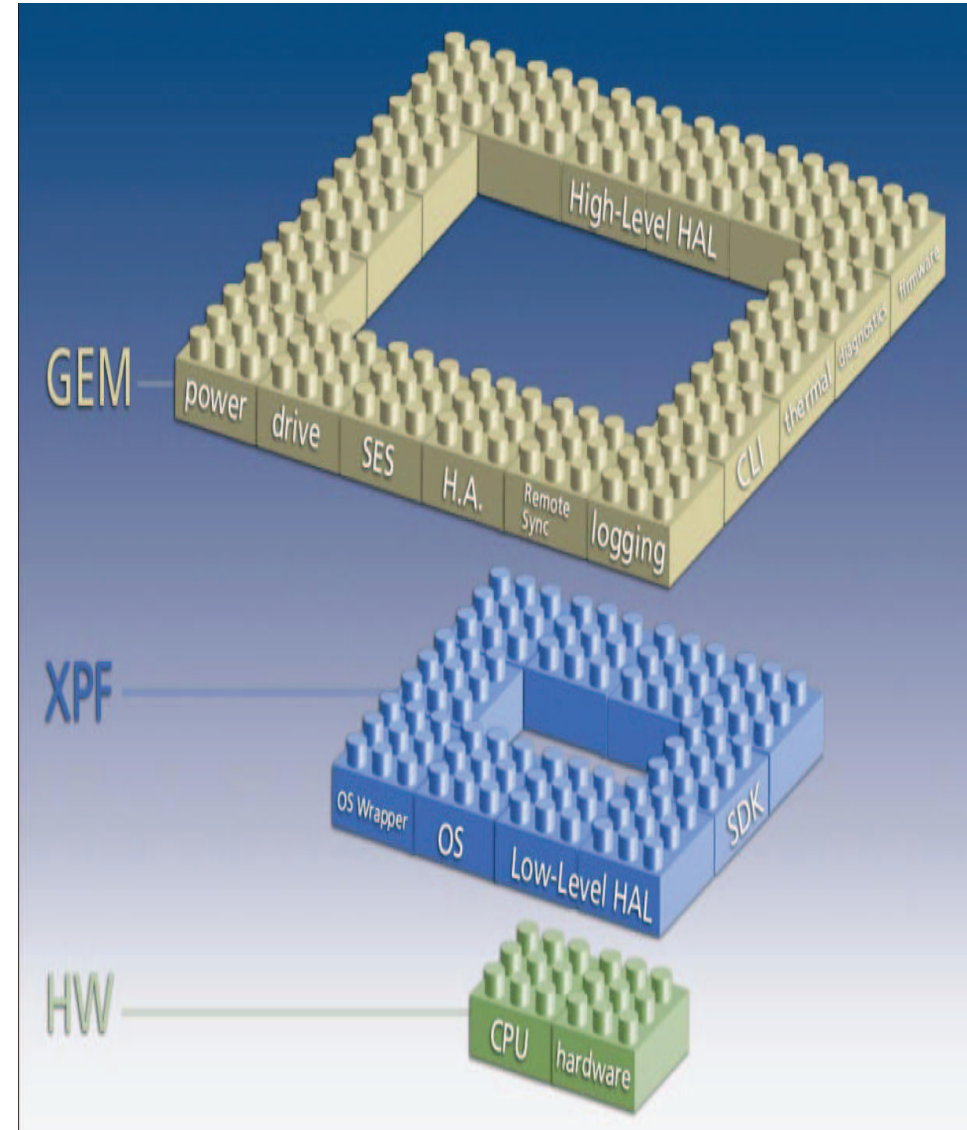


GEM (General Enclosure Management) Building Blocks



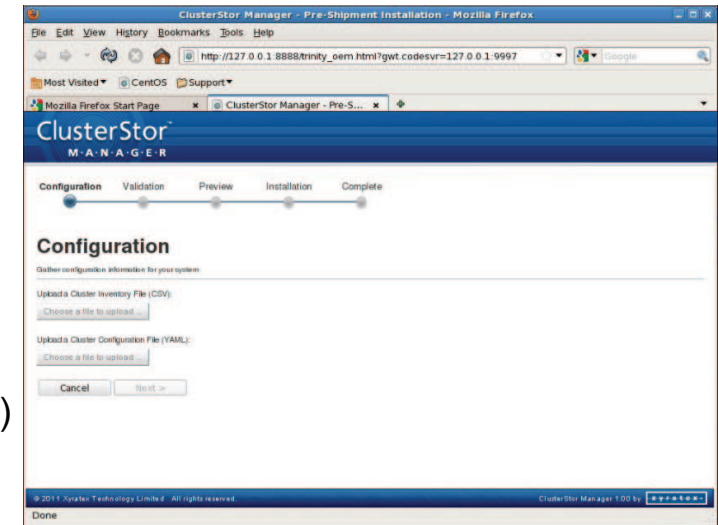
GEM Overview

- High Availability Hardware and Software
- Advanced Firmware Updates
- Software Integrity Checking
- Logging - Volatile and Persistent
- Power Monitoring and control
- Adaptive Cooling
- Drive Power Control
- Advanced CLI
- Automatic enclosure plug and play
- Diagnostics
 - Extensive status information of all services at all times
- SES 2.xx Compliant
 - Tracking the standard
- Ethernet Support (when available)
 - Telnet, SSH
- Based on 4th Generation codebase Xyratex Portability Framework (XPF)



ClusterStor Manager

- **Provides extensive end-to-end management of the entire Lustre cluster**
- **Automated Installation and Maintenance**
 - Up and running in hours vs. days/weeks
 - No need to go offline for updates
 - Integrated Cluster and block storage management
- **Health Monitoring and Notification**
 - Health status of entire storage cluster
 - Error logging at every layer (Lustre™, RAID, Enclosure..)
 - E-mail alerts & single button bug submission and support via Bugzilla (OEM and/or XRTX)
 - Root cause diagnostics and error message interpretation
- **Leverages proven Open Source Infrastructure**
 - LMT- Lustre™ management
 - Yaci – cluster provisioning
 - Puppet – cluster configuration
 - LNET – LLNL GUI for Lustre™ monitoring
 - Ganglia/Cerebro – scalable cluster monitoring
 - Powerman – power management
 - Pacemaker – fail over clustering
 - DRBD – configuration database failover
- **Advanced analytics and data mining facility**
 - The means to optimize data I/O





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Installing and Managing ClusterStor

Installing a cluster

ClusterStor[™]
M·A·N·A·G·E·R

Help
User [admin]

Configuration

Validation

Preview

Installation

Complete

Configuration

Gather configuration information for your system

Upload a Cluster Inventory File (CSV):

✔ imtest3.csv

Choose a file to upload...

Upload a Cluster Configuration File (YAML):

✔ imtest3.yaml

Choose a file to upload...

Next

Cancel

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Installing a cluster

The screenshot displays the ClusterStor Manager web interface. At the top, the logo "ClusterStor M·A·N·A·G·E·R" is on the left, and "Help" and "User [admin]" are on the right. A progress bar below the header shows five steps: Configuration, Validation, Preview, Installation, and Complete. The "Validation" step is currently active, indicated by an orange dot. Below the progress bar, the heading "Validation" is followed by the text "The following test(s) will be run automatically after installation:". A list of tests follows: "Lustre Basic (sanity.sh) validation tests (required)", "IOZone performance tests (required)", and "Lustre OBDFilter survey (required)". At the bottom left, there are three buttons: "< Back", "Next >", and "Cancel". A mouse cursor is pointing at the "Next >" button. The footer contains the copyright notice "© 2011 Xyratex Technology Limited All Rights Reserved" on the left and "ClusterStor Manager 0.53 by" followed by a small logo on the right.

ClusterStor
M·A·N·A·G·E·R

Help
User [admin]

Configuration Validation Preview Installation Complete

Validation

The following test(s) will be run automatically after installation:

- Lustre Basic (sanity.sh) validation tests (required)
- IOZone performance tests (required)
- Lustre OBDFilter survey (required)

< Back Next > Cancel

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Installing a cluster

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Help
User [admin]

Configuration Validation **Preview** Installation Complete

Preview

Review configuration information for your system:

Cluster Name: lmtest3

Filesystems: 1
Name: demo5
Estimated Capacity: N/A
Number (size) of OSTs: 1
MDT Capacity: 2 TB

Lustre Node Summary
Number of OSS: 2
Total OSS Capacity: 1 TB
Number of MDS: 2
Total MDS Capacity: 2 TB
Number of MGS: 1

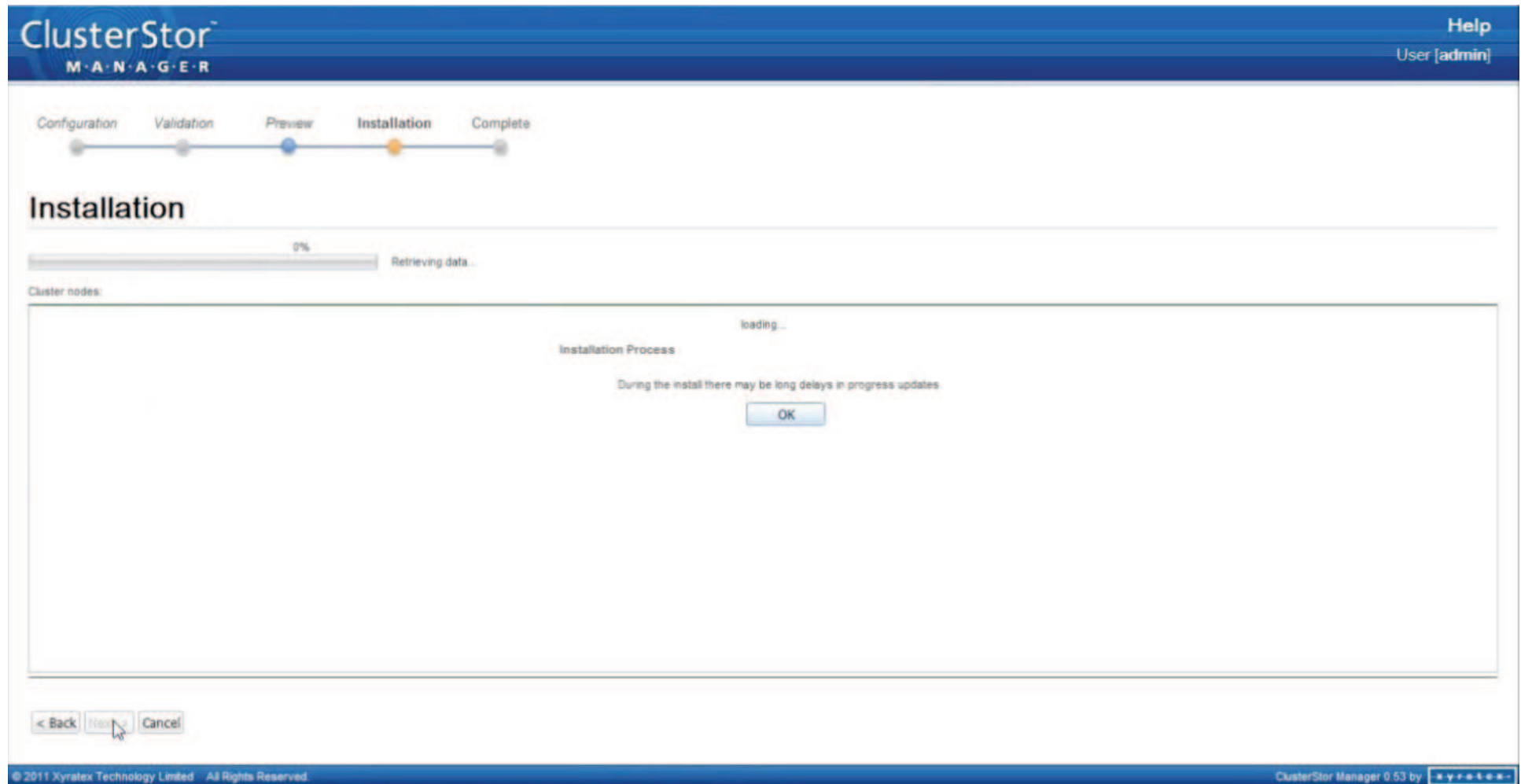
Hardware Summary
Racks: 1
2U24 Enclosures: 2
Servers: 2

Test Summary
lustre_basic_validation: Lustre Basic (sanity.sh) validation tests
performance_test: IOZone performance tests
obdfilter-survey: Lustre OBDFilter survey

< Back Next > Cancel

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Installing a cluster



Installing a cluster

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Help
User [admin]

ConfigurationValidationPreviewInstallationComplete

Installation

Overall cluster94%

Cluster nodes:4 pending, 0 completed, 0 failed

Intest300	94%	Stopping WIBs on OSSs: Success Dismounting WIBs on OSSs: Success Stopping WIB MDs on OSSs: Success
Intest301	94%	Stopping WIBs on OSSs: Success Dismounting WIBs on OSSs: Success Stopping WIB MDs on OSSs: Success
Intest302	94%	Stopping WIBs on OSSs: Success Dismounting WIBs on OSSs: Success Stopping WIB MDs on OSSs: Success
Intest303	94%	Stopping WIBs on OSSs: Success Dismounting WIBs on OSSs: Success Stopping WIB MDs on OSSs: Success

< Back

Next >

Cancel

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Installing a cluster

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Help
User [admin]

Configuration

Validation

Preview

Installation

Complete

Complete

The cluster is installed and ready to ship!

Basic tests

IOZone tests

Test results for Lustre Sanity Test:
Loading ...

Name	Duration	Status	RC	Error message
loading				

< Back

Install Another Cluster

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Help
User [admin]

Welcome to ClusterStor Manager

A configuration wizard will guide you through the steps required to make your storage cluster operational.


First, please set the password of the built-in "admin" account.

Password :

Retype Password :

Please take care not to forget this password.

When the browser prompts you to login, use admin as the user name, along with this password.



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Help
User [admin]

Lustre Network

Lustre Users

Complete

Lustre Network

Please configure the IB/10GbE Lustre network interfaces for OSS/MDS nodes.

Assign IP addresses for IB/10GbE:

IP Range Start : 192.168.0.2

IP Range End : 192.168.1.254

-

+

Netmask : 255.255.254.0 (/23)

MTU : 85520

DNS Server(s) : 10.106.70.10

10.66.0.12

NTP Server(s) : 2.us.pool.ntp.org

Next

Cancel

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Help
User [admin]

Lustre Network **Lustre Users** Complete

Lustre Users

Please configure the method by which Lustre Users will be authenticated.

Authenticate Lustre Users using:

None
LDAP
None

You may choose a method to resolve permissions for Lustre Users, other than the Lustre default (POSIX uid and gid numbers). This might be useful if you will have users in multiple groups, though it could cause a performance impact.

< Back Next > Cancel

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Help
User [admin]

Lustre Network Lustre Users Complete

Lustre Users

Please configure the method by which Lustre Users will be authenticated:

Authenticate Lustre Users using: LDAP

LDAP Server: 10.106.70.10 Port: 3268
URI: ldap://10.106.70.10:3268
Base DN: DC=xyus,DC=xyratex,DC=com
User DN: OU=Users - Boulder,DC=xyus,DC=xyratex,DC=com
Group DN:
Hosts DN:
☒ Storage cluster must use authentication to bind to this LDAP server
Bind DN: ldap@xyus.xyratex.com
Password:
Password Retype:
☐ Use LDAP Settings for AD
Lustre Filesystem: demo5
LDAP URI: Port:
URI: ldap://
Base DN:

< Back Next > Cancel

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Help
User [admin]

Node Control Performance RAID Log Browser Support CFS Health

FS Name State
demo5 Stopped

Commands for demo5 Commands for nodes Enable Auto Refresh

Hostname	Node Type	Power State	Lustre State	Last command	Mounted	Targets (10)	HA Resources	HA Partner	User Actions
Intest300	MDS	On	Started	n/a	2	1	All	Intest301	
Intest301	MDS	On	Stopped	Reboot done	0	1	None	Intest300	
Intest302	OSS	On	Started	n/a	4	4	Local	Intest303	Commands (0)
Intest303	OSS	On	Stopped	n/a	0	4	None	Intest302	

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Help
User [admin]

Node Control Performance RAID Log Browser Support CIFS Health

FS Name State
demo5 Stopped

Commands for demo5
Commands for Intest302

Enable Auto Refresh

FS Name	State	Last command	Mounted	Targets (10)	HA Resources	HA Partner	User Actions
Intest300	Started	n/a	2	1	All	Intest301	
Intest301	Stopped	Reboot done	0	1	None	Intest300	
Intest302	Started	n/a	4	4	Local	Intest303	
Intest303	Stopped	n/a	0	4	None	Intest302	

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The screenshot displays the ClusterStor Manager web interface. The top navigation bar includes the 'ClusterStor M·A·N·A·G·E·R' logo, a 'Help' link, and the user 'admin'. Below the navigation bar, there are tabs for 'Node Control', 'Performance', 'RAD', 'Log Browser', 'Support', 'CIFS', and 'Health'. The main content area shows a table of nodes with columns for Hostname, Node Type, Power State, Luster State, Last command, Mounted, Targets (10), HA Resources, HA Partner, and User Actions. A modal dialog box titled 'Please Confirm Reboot node Intest302' is open, displaying an information icon and the text: 'Perform an orderly reboot of node Intest302. 4 OSTs will be temporarily handed off to Intest303.' The dialog has 'Reboot' and 'Cancel' buttons. A mouse cursor is hovering over the 'Reboot' button.

FS Name	State	Commands for demo5	Commands for Intest302
demo5	Stopped		

Hostname	Node Type	Power State	Luster State	Last command	Mounted	Targets (10)	HA Resources	HA Partner	User Actions
Intest300	MDS	On	Started	n/a	2	1	All	Intest301	
Intest301	MDS	On	Stopped	Reboot done	0	1	None	Intest300	
Intest302	OSS	On	Started	n/a	4	4	Local	Intest303	
Intest303	OSS	On	Stopped	n/a	0	4	None	Intest302	

Please Confirm Reboot node Intest302

Perform an orderly reboot of node Intest302
4 OSTs will be temporarily handed off to Intest303

Reboot Cancel

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ClusterStor[™] M·A·N·A·G·E·R Help User [admin]

Node Control Performance RAID Log Browser Support CIFS Health

File Configure

demo5

demo5.MDT0000 2011-06-25 17:35:40.0

%CPU	%KB	%nodes
Operation	Samples	Sample /Sec Avg Value Std Dev
add_conn	0	0.00 0.00 0.00
adjust_lms	0	0.00 0.00 0.00
attach	0	0.00 0.00 0.00
brw	0	0.00 0.00 0.00
brw_async	0	0.00 0.00 0.00
cancel	0	0.00 0.00 0.00
cancel_unused	0	0.00 0.00 0.00
change_cbdata	0	0.00 0.00 0.00
checkmd	0	0.00 0.00 0.00
cleanup	0	0.00 0.00 0.00
close	0	0.00 0.00 0.00
commitbw	0	0.00 0.00 0.00
connect	0	0.00 0.00 0.00
copy	0	0.00 0.00 0.00
create	0	0.00 0.00 0.00
del_conn	0	0.00 0.00 0.00
destroy	0	0.00 0.00 0.00
destroy_export	0	0.00 0.00 0.00
detach	0	0.00 0.00 0.00
disconnect	0	0.00 0.00 0.00
enqueue	0	0.00 0.00 0.00
extent_calc	0	0.00 0.00 0.00
get_info	0	0.00 0.00 0.00
getatr	0	0.00 0.00 0.00
getatr_async	0	0.00 0.00 0.00
getattr	0	0.00 0.00 0.00
health_check	0	0.00 0.00 0.00
import_event	0	0.00 0.00 0.00
init_export	0	0.00 0.00 0.00

OST 2011-06-25 17:35:35.0

Ost Name	Read Rate	Write Rate	%CPU	%KB	%nodes
demo5-OST0000	----	----	----	----	----
demo5-OST0001	----	----	----	----	----
demo5-OST0002	----	----	----	----	----
demo5-OST0003	----	----	----	----	----
demo5-OST0004	----	----	----	----	----
demo5-OST0005	----	----	----	----	----
demo5-OST0006	----	----	----	----	----
demo5-OST0007	----	----	----	----	----
AGGREGATE	0.00	0.00	----	----	----
MAXIMUM	----	----	----	----	----
MINIMUM	----	----	----	----	----
AVERAGE	0.00	0.00	0.00	0.00	0.00

OSS 2011-06-25 17:35:35.0

Oss Name	Read Rate	Write Rate	%CPU	%Space Used	%nodes
lms302	----	----	----	----	----
lms303	----	----	----	----	----
AGGREGATE	0.00	0.00	----	----	----
MAXIMUM	----	----	----	----	----
MINIMUM	----	----	----	----	----
AVERAGE	0.00	0.00	0.00	0.00	0.00

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Help
User [admin]

Node Control Performance **RAID** Log Browser Support CIFS Health

MDRAID Info

	UUID	Host Name	Array Path	State	Array Usage	Size (GB)	RAID Level	Total Disks	Failed Disks	Throughput	IOPS	\$
1	e509fc7a-de95cab2-654267c3-bdfo4f15	intest300	/dev/md2	Unavailable	N/A	-1	1	2	0	0	0	
2	fffae1e2-6ca50416-61178583-2d9e7f15	intest300	/dev/md*	active	N/A	32	10	6	0	1	0	
3	act5af4c-e6b04ad9-95b6d2f2-518093ed	intest300	/dev/md0	active	N/A	11	1	2	0	3	0	

MDRAID I/O Stats

	Timestamp	Host Name	Transfer Rate (kB/s)	Requested Read IOPs	Requested Write IOPs	Actual Read IOPs	Actual Write IOPs	Read Throughput (kB/s)
1	Jun 25, 2011 15:23:39	intest302	0.00	0.00	0.00	0.00	0.00	0.00
2	Jun 25, 2011 15:23:39	intest301	0.00	0.00	0.00	0.00	0.00	0.00
3	Jun 25, 2011 15:23:39	intest300	0.00	0.00	0.00	0.00	0.00	0.00
4	Jun 25, 2011 15:23:39	intest300	0.00	0.00	0.00	0.00	0.00	0.00
5	Jun 25, 2011 15:23:39	intest302	0.00	0.00	0.00	0.00	0.00	0.00
6	Jun 25, 2011 15:23:39	intest302	0.00	0.00	0.00	0.00	0.00	0.00
7	Jun 25, 2011 15:23:39	intest302	0.00	0.00	0.00	0.00	0.00	0.00
8	Jun 25, 2011 15:23:39	intest302	0.00	0.00	0.00	0.00	0.00	0.00
9	Jun 25, 2011 15:23:43	intest303	0.00	0.00	0.00	0.00	0.00	0.00
10	Jun 25, 2011 15:23:43	intest303	0.00	0.00	0.00	0.00	0.00	0.00
11	Jun 25, 2011 15:23:43	intest303	0.00	0.00	0.00	0.00	0.00	0.00

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User [admin]

Node Control Performance RAID Log Browser Support CFS Health

Filter (45298 rows)

From: Host: Facility: Priority:
To: PID: Program: Subsystem:
Message: Clear form Apply Remove

Host	Facility	Priority	PID	Program	Subsystem	Date	Message
1 Intest300	cron	notice	2172	run-parts/etc/		Jun 25, 2011 16:44:13	starting beRotateLogsTable.sh
2 Intest300	cron	notice	2189	run-parts/etc/		Jun 25, 2011 16:44:13	finished beRotateLogsTable.sh
3 Intest300	cron	notice	2172	run-parts/etc/		Jun 25, 2011 16:44:13	starting certwatch
4 Intest300	cron	notice	2199	run-parts/etc/		Jun 25, 2011 16:44:13	finished certwatch
5 Intest300	cron	notice	2172	run-parts/etc/		Jun 25, 2011 16:44:13	starting logrotate
6 Intest300	user	notice	0	logrotate		Jun 25, 2011 16:44:13	ALERT exited abnormally with [1]
7 Intest300	cron	notice	2207	run-parts/etc/		Jun 25, 2011 16:44:13	finished logrotate
8 Intest300	cron	notice	2172	run-parts/etc/		Jun 25, 2011 16:44:13	starting makewhatis.cron
9 Intest300	syslog	info	19240	syslog-ng		Jun 25, 2011 16:44:47	Log statistics: dropped="program(/opt/xyrutex/bin/trinty-monitor.py)"=0, dropped="program(/usr/bin/mysql -h 127.0.0.1 -u root 10db)"=0, dropped="
10 Intest300	daemon	err	0	dhcpcd		Jun 25, 2011 16:44:51	DHCPDISCOVER from 30:46:9a:fe:29:35 via eth0: network 172.16.0.0/16: no free leases
11 Intest300	cron	notice	23457	run-parts/etc/		Jun 25, 2011 16:44:53	finished makewhatis.cron
12 Intest300	cron	notice	2172	run-parts/etc/		Jun 25, 2011 16:44:53	starting prelink
13 Intest300	daemon	err	0	dhcpcd		Jun 25, 2011 16:44:55	DHCPDISCOVER from 30:46:9a:fe:29:35 via eth0: network 172.16.0.0/16: no free leases
14 Intest300	cron	info	24120	CROND		Jun 25, 2011 16:45:01	(root) CMD (/opt/xyrutex/bin/pollSmbConfState.sh)
15 Intest300	daemon	err	0	dhcpcd		Jun 25, 2011 16:45:03	DHCPDISCOVER from 30:46:9a:fe:29:35 via eth0: network 172.16.0.0/16: no free leases
16 Intest300	daemon	info	0	cib		Jun 25, 2011 16:45:07 [7982]: info: cib_stats: Processed 89 operations (23125.00us average, 0% utilization) in the last 10min	
17 Intest300	daemon	err	0	dhcpcd		Jun 25, 2011 16:45:20	DHCPDISCOVER from 30:46:9a:fe:29:35 via eth0: network 172.16.0.0/16: no free leases
18 Intest300	cron	notice	26222	run-parts/etc/		Jun 25, 2011 16:45:29	finished prelink
19 Intest300	cron	notice	14613	anacron		Jun 25, 2011 16:45:29	Job "cron.daily" terminated
20 Intest300	daemon	warn	6974	puppetmasterd		Jun 25, 2011 16:45:33	Host is missing hostname and/or domain: Intest300
21 Intest300	daemon	notice	6974	puppetmasterd		Jun 25, 2011 16:45:33	Compiled catalog for Intest300 in 0.21 seconds

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Managing the solution

ClusterStor™
M·A·N·A·G·E·R

Help

User [admin]

Node Control Performance RAID Log Browser **Support** CIFS Health

Support files

Support files contain system information to be sent to Xyratex support

Collect support file

Import support file

Support files that have been collected: (refreshing...)

Collection time ▼	Method	Reason	Status	User actions ▼
Jun 11, 2011 16:35:45	Manual	Requested by 'admin'	Still collecting: 0% complete	
Jun 10, 2011 21:59:30	Manual	Requested by 'admin'	Complete	<div>Actions ▼<ul style="list-style-type: none">View contentTransmit to Xyratex supportTerminate collectionDownload a copyDelete</div>

Managing the solution



The screenshot displays the ClusterStor Manager web interface. At the top, the title bar reads "ClusterStor M·A·N·A·G·E·R" with a "Help" link and "User [admin]" on the right. A navigation menu includes "Node Control", "Performance", "RAID", "Log Browser", "Support", "CIFS", and "Health". The "Health" tab is selected, and a large "samba" logo with a double-headed arrow is centered on the page. Below the logo, a section titled "Logged in as admin" contains five icons: HOME, GLOBALS, SHARES, WIZARD, and VIEW. The main content area begins with "Welcome to SWAT!" and a prompt to "Please choose a configuration action using one of the above buttons". A link for "Samba Documentation" is provided, followed by a list of Samba components:

- **Daemons**
 - [smbd](#) - the SMB daemon
 - [nmbd](#) - the NetBIOS nameserver
 - [winbindd](#) - the winbind daemon
- **Configuration Files**
 - [smb.conf](#) - the main Samba configuration file
 - [lmhosts](#) - NetBIOS hosts file
 - [smbpasswd](#) - SMB password file
- **Administrative Utilities**
 - [smbcontrol](#) - send control messages to Samba daemons
 - [smbpasswd](#) - managing SMB passwords
 - [SWAT](#) - web configuration tool

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Xyratex ClusterStor – Breaking new ground

- **Up to 1.5 PB/rack**
 - Up to 672 disks per rack (exp rack)
 - Supports 1, 2 or 3 TB SAS disks
- **More than 20 GB/s throughput per rack**
- **Supports full QDR IB or 10 GbE fabrics**
- **All active components redundant and hot swappable**
- **Engineered, balanced solution for extreme density and performance**
- **Dedicated GUI based management utility**
- **Lustre 2.0/2.1 based solution**
 - Active development of new features and fixes
- **Energy optimized design**
 - Less than 20 kW/rack at full performance



The End!!

